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Negative demographic growth as the near future for humanity

The 20th and 21st centuries were characterized by demographers as a period of rapid growth in the world population. So, if from 1800, the time of Thomas Malthus, to 1900, the world population increased from approximately 1 billion to 1 billion 650 million 000, from 1900 to 2000 its number increased from 1 billion 650 million to 6 billion 144 million and by 2023, there will be more than 8 billion representatives of homo sapiens. This has given demographers the basis to use the term “population explosion,” futurologists to think about whether the Earth’s resources will be enough to meet the needs of a rapidly increasing number of people, and some politicians and representatives of international organizations to accept measures to limit birth rates at the national (China 1979 – 2015) and global (family planning programs for developing countries) levels.

However, shortly after World War II, a new phenomenon appeared, the dark demographic zone, which began to expand since then and is still expanding. In the 1950s in Italy, and since the late 1960s in Germany, Belgium, Switzerland, Sweden, Great Britain, and Austria, the birth rate decreased below the level of simple population replacement. Demographers use several fertility indicators. The most obvious is the Total Fertility Rate (TFR), which shows the average number of children born to a woman during her reproductive period, that is, from 15 to 50 years. Taking into account the current average level of infant and child mortality and some other factors, the level of simple reproduction or zero demographic growth corresponds to a TFR value of 2.1. If in 1960 – 1970, by the way, the peak years of the world population growth rate, TFR was below 2.1 only in a few of the above-mentioned European countries, then by 2023 TFR had fallen below this level in most countries of the world. Data from various international organizations and national statistical services vary, but everyone confirms this trend. This text provides US CIA data for 2023. According to them, this year only 92 countries out of 227 countries and territories had positive demographic growth, with a TFR exceeding 2.1. Moreover, such population giants as China (TFR 1.46), India (2.07), USA (1.84), Brazil (1.75) fell into the dark zone of negative demographic growth. In terms of population growth rates, Belarus is in 200th place (1.52) next to North Macedonia and Malta. At the bottom of the list are economically very successful South Korea and Taiwan with outrageous TFR values of 1.11 and 1.09, respectively.
It is noteworthy that among the developed countries, only Israel is in the light zone of positive demographic growth (2.54). It should be noted that

the birth rate has been declining over the past 50 years even in countries still in the light zone. The global average TFR has decreased by 2023 to, according to various estimates, 2.3 – 2.4. If this trend continues, and there are no compelling reasons for change, then, according to pessimistic forecasts, in 2030, and according to optimistic forecasts, 40-50 years later, humanity may move into a state of gradual depopulation. In 2011, a group of researchers, Leontine Alkema; Adrian E. Raftery; Patrick Gerland et al. published a TFR forecast for countries and regions of the world based on trends from 1975 to 2010. and using Bayesian Projection Model (BPM) (2). According to this forecast, in 2045-2050. this coefficient for the regions of Asia will be 1.6 – 1.8, for Europe and North America 1.7 – 1.9, for Northern and Southern Africa 1.7 – 1.8. According to this forecast, only Eastern, Central and Western Africa will remain in the zone of positive demographic growth, TFR 2.5-2.8 (in 2005 - 2010, the TFR value for these three regions was 4.6 - 5.1) and sparsely populated Melanesia and Polynesia - 2.2-2.3 (value 2005-2010 – 3.4). For the top three countries in terms of population in the first quarter of the 21st century, this forecast gives the following values: India 1.85, China 1.85, USA 1.85 (values for 2005-2010, respectively, 2.76, 1.77, 2.09).

The reasons for this phenomenon are generally known. These are urbanization, a post-industrial economy that requires many years of education, the growth of female employment in this economy, the values of a consumer society, the weakening influence of world religions and less significant reasons. An important feature of these reasons is that they are very difficult to eliminate and have a long-term growing nature.

What conclusions can be drawn from the above?

Firstly. Depopulation in the next 150-200 years could become a more dangerous threat to human existence than a nuclear war, an asteroid impact or climate change.

Secondly. To combat the coming depopulation, systemic, coordinated measures are needed both at the national and global levels. These measures must be taken now, and not just when negative global demographic growth becomes a reality.

Third. Measures aimed at limiting the birth rate both at the national and global levels are destructive and pose a threat to the future of humanity. The sad experience of the one-child-per-family policy implemented in China since 1979 is well known. The leadership of this country learned a lesson and abandoned such a demographic policy in 2015, although its consequences continue to be felt to this day (TFR 1.46 in 2023).

In conclusion, I would like to express the hope that humanity will find ways to overcome this insidious and as yet insufficiently understood threat and ensure its survival.

Sources:

1. Total fertility rate (TFR) https://www.cia.gov/the-world-factbook/field/total-fertility-rate/country-comparison/
2. Probabilistic Projections of the Total Fertility Rate for All Countries Leontine Alkema; Adrian E. Raftery; Patrick Gerland Samuel J. Clark; François Pelletier; Thomas Buettner; Gerhard K. Heilig. Demography (2011) 48 (3): 815–839. https://read.dukeupress.edu/demography/article/48/3/815/169815/Probabilistic-Projections-of-the-Total-Fertility 02.01.2024